RAD®
TORQUE SYSTEMS

SMART SOCKET USER MANUAL

LEADING MANUFACTURER OF ADVANCED TORQUE SYSTEMS

PNEUMATIC BATTERY ELECTRONIC ELECTRIC TRANSDUCER

THE INDUSTRY STANDARD...BELIEVE IT!

ELECTRIC SERIES (V-RAD)

Torque Range
100-2500 ft. lbs.

- ✔ **Quick adjust torque settings**
  Fast and accurate “dial a torque” or digital display option for maximum versatility and efficiency
- ✔ **Soft-start vary speed trigger**
  Allows operator to safely and quickly set reaction arm before full torque is applied
- ✔ **Equal power in forward and reverse**
  Convenience and cost effective use of same tool for break away and final torque
- ✔ **Advanced ultra-durable electric motor design**
  Extreme duty designed to reduce maintenance cost and increase reliability
- ✔ **Advanced gearbox design**
  PATENTED planetary gear reduction drive system delivering one of the highest power-to-weight ratios of any controlled bolting system

ELECTRONIC SERIES (E-RAD)

Torque Range
200-6000 ft. lbs.

- ✔ **Touch screen torque selection**
  Fast and convenient error-free digital single increment torque settings
- ✔ **Digital torque console display**
  Maximum accuracy by seeing the set torque value and the actual delivered torque value
- ✔ **Lightweight, ergonomic pistol grip design**
  Advanced low-profile handle to reduce operator fatigue and increase productivity
- ✔ **Extremely low noise level only 75db**
  World’s quietest extreme torque gun, ideal for sensitive environments and standards
- ✔ **LED green (Pass) or red (Fail) indicator lights**
  Unmistakable visual signal indicates status of torque procedure for maximum accuracy and speed

BATTERY SERIES (B-RAD)

Torque Range
100-1500 ft. lbs.

- ✔ **Quick adjust torque settings**
  Fast and accurate “dial a torque” or digital display option for maximum versatility and efficiency
- ✔ **Soft-start vary speed trigger**
  Allows operator to safely and quickly set reaction arm before full torque is applied
- ✔ **Equal power in forward and reverse**
  Convenience and cost effective use of same tool for break away and final torque
- ✔ **Imagine the freedom – no air lines, no power cords!**
  The lightweight design of the B-SERIES makes them ideal for any application, especially where compressed air and electricity are not readily available
- ✔ **Advanced gearbox design**
  PATENTED planetary gear reduction drive system delives one of the highest power-to-weight ratios of any controlled bolting system

PNEUMATIC SERIES

Torque Range
50-8500 ft. lbs.

- ✔ **PATENTED planetary gear reduction**
  Delivers one of the highest power-to-weight ratios of any pneumatic controlled bolting system
- ✔ **Smooth continuous flow of controlled torque**
  Eliminates destructive hammering
- ✔ **Lightweight ergonomic pistol grip design**
  Reduces operator strain and injury; resulting in increased productivity
- ✔ **Unmatched reliability and quality**
  Delivered by one of the most advanced engineered gear boxes on the market

SMART SOCKET SERIES

- ✔ **Measures and displays peak torque**
  Transducer technology combined with a custom socket measures the actual torque applied to the bolt during a torque cycle
- ✔ **Pass or Fail indication**
  Unmistakable digital signal indicates peak torque achieved for maximum accuracy
- ✔ **Bluetooth technology**
  View and download logs onto your smartphone or tablet
- ✔ **Ideal on site calibration tools**
  Comparable in size to a standard socket, it’s the perfect tool for inspecting bolted joints and can f function as a master calibrator for your torque tools

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MANUAL REVISION HISTORY

The installer of this equipment is responsible for complying with Federal, NEC (National Electrical Code) or equivalent, and Local Guidelines and Application Codes that govern protection, earthing/grounding, disconnects and other current protection for electrical equipment for use in indoor or outdoor applications.

Revision **2012.02.07**: Initial Firmware Release 2.26.08

Revision **2012.10.23**: Firmware Release 2.27.02

Revision **2014.05.30**: Firmware Release 3.04.13

IMPORTANT SAFETY NOTICE

RAD TOOLS ARE SAFE AND RELIABLE. NOT FOLLOWING PRECUATIONS AND INSTRUCTIONS OUTLINED HERE CAN REUSLT IN INJURY TO THE TOOL, OPERATOR AND FELLOW WORKERS.

New World Technologies Inc, its distributors and retailers assume no liability for failures in compliance with these warnings and safety guidelines.

By purchasing this tool system and battery, the buyer assumes all risks associated with this product. If you do not agree with these conditions, refrain from using the tool.

WARNING!

Do not operate the tool before reading this user manual. If breakdown, malfunction or damage occurs, DO NOT attempt to repair. Contact New World Technologies Inc. or your local distributor immediately.

Only persons trained and qualified should attempt the installation, operation and diagnosis of this equipment.

WARNING!

Intended use of this equipment is for commercial and industrial bolting applications. The tool should only be used if the equipment is protected from exposure to excessive or corrosive moisture, dust, dirt, ambient temperatures, vibrations and impacts.

- **BEFORE** using the Smart Socket, unpack the device and all accessories to ensure you have all components listed in Section 1.1 – Receiving and Inspection.
- **BEFORE** using your Smart Socket, read all instructions and warnings in this manual and understand the safe use of this product.
- **ALWAYS** wear safety goggles during operation.
- **ALWAYS** make sure the Socket is fitted properly to a tool with the Retaining Pin and O-Ring before you operate the tool and Socket.
- **ALWAYS** make sure the Socket is fitted properly to the fastener before you operate the tool and Socket.
- **ALWAYS** keep your body parts clear of the Socket during operation.
- **ALWAYS** safely support the system during use, while ensuring body parts are clear of any rotating parts and pinch points. The system must be supported at all times in order to prevent unexpected release in the event of fastener or component failure.
- **NEVER** exceed the Maximum Socket Rated Torque. Failure to comply voids warranty.
- **NEVER** use the Smart Socket without understanding and following the safety instructions and warnings in this manual.

IMPORTANT BATTERY SAFETY NOTICE

WARNING!

Do not operate the tool or charge the batteries before reading the safety instructions and warnings detailed in this manual. If breakdown, malfunction, or damage occurs, DO NOT attempt to repair; contact New World Technologies Inc. or your local distributor immediately.

- Lithium Polymer batteries are volatile. Failure to read and follow these instructions may result in fire, personal injury and/or damage to property if charged or used improperly.

- New World Technologies Inc, its distributors and retailers assume no liability for failures in compliance with these warnings and safety guidelines.

- By purchasing this tool system and battery, the buyer assumes all risks associated with this product. If you do not agree with these conditions, please return the tool and accessories immediately and before use.

1.0 General Information

1.1 Receiving and Inspection

Each Smart Socket System is shipped with the following:

1. Smart Socket (includes internal rechargeable LiPo battery)
2. Socket Retaining Pin
3. Socket Retaining Pin O-Ring (set screw for smaller Smart Sockets)
4. USB Comms Cable
5. USB Charger
6. Factory Calibration Certificate
7. User Manual
8. USB Stick containing the RT Datalogger Software (only available upon request)

Figure 1.1-1: System Components

Upon receiving your Smart Socket System, please immediately check the following:

1. Check the shipping packaging condition and report any damage immediately to the carrier that delivered the Smart Socket System.
2. Remove the Smart Socket and accessories from the shipping packaging and ensure you have each of the items listed above.
3. Verify the Smart Socket Model you received is as your purchase order.
4. Inspect the Smart Socket and accessories for external damage during shipment and report any damage to the carrier that delivered the Smart Socket System.
5. If the Smart Socket is to be stored prior to use, ensure that it is stored in a location that conforms to the storage temperature and humidity specifications outlined in Section 1.2 - Specifications.

1.2 Specifications

Please ensure that all specifications below are observed when sizing and utilizing the Smart Socket for an application.

1.2.1 Model Specifications

Max. Torque Range (FtLb)	Model	Max. Torque Range (Nm)
75-1500 FtLb	33 mm 1" Square Drive	100-2034 Nm
75– 1500 FtLb	46 mm 1" Square Drive	100-2034 Nm
150 – 3000 FtLb	50 mm 1" Square Drive	200– 4068 Nm
150 – 3000 FtLb	55 mm 1.5" Square Drive	200– 4068 Nm
150 – 3000 FtLb	60 mm 1" Square Drive	200– 4068 Nm
400 – 8000 FtLb	80 mm 1.5"Square Drive	540– 10848 Nm

Table 1.2.1: Model Specifications

1.2.2 Charging Specifications

	Units	240 mAh
Charge Time	Hours	Approx. 1
Storage Time (Must be fully Charged)	Months	3-4

Table 1.2.2: Charging Specifications

1.2.3 Environmental Specifications

	All Models	
Ambient Operating Temperature Range	°C	°F
Optimum Battery Life	5 to 35	41 to 95
Absolute Maximum	1 to 60	34 to 140
Ambient Charging Temperature Range	°C	°F
Temperature at Charging	0 to 45	32 to 113
Storage Temperature Range	°C	°F
Optimum Battery Life	-20 to 45	-4 to 113
Storage More than 3 Months	0 to 30	32 to 86
Humidity	10% to 90% non-condensing	

Table 1.2.3: Environmental Specifications

2.0 Battery Usage and Charging

This section provides instructions for safe usage and charging of the Smart Socket internal LiPo battery.

WARNING!

Do not operate the tool or charge the batteries before reading the safety instructions and warnings detailed in this manual. If breakdown, malfunction or damage occurs, DO NOT attempt to repair; contact New World Technologies Inc. or your local distributor immediately.

WARNING!

Lithium Polymer (LiPo) batteries are volatile. Failure to read and follow these instructions may result in fire, personal injury and/or damage to property if charged or used improperly.

2.1 General Safety Warnings and Guidelines

The Smart Socket is assembled, calibrated and shipped with a rechargeable Lithium Polymer (LiPo) battery.

1. Batteries are NOT fully charged as you receive them; they may contain approximately 50% of a full charge.
2. Use the New World Technologies Inc. supplied USB charger only. Do not use any other Lithium Polymer or NiCd or NiMh charger. Failure to comply may cause a fire, which may result in personal injury and/or property damage.
3. Never charge the tool unattended. When charging LiPo batteries you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
4. Charge in an isolated area, away from flammable materials.
5. Let the Smart Socket and battery cool down or warm up to recommended ambient temperature before charging.

6. If there is any sign of damage to the charger or charging cable, do not attempt to charge the tool/battery. Unplug the charger immediately.
7. If there is any sign of damage to the tool housing or to the battery pack, do not attempt to charge
8. If there is any sign of damage to the battery pack, or the battery pack is leaking, do not attempt to charge or make direct contact. If battery fluid comes into direct contact with skin or eyes, flush immediately with fresh, clean water and contact a physician.

2.2 Battery Charging and Storage

Battery life and charge capacity will be greatly extended by following the optimal operating, charging and storage temperature ranges stated in Section 1.2 - Specifications.

Depending on age, ambient operating conditions and care, a fully charged battery should have a stand-by life of 1-2 weeks.

Depending on the above mentioned factors and in addition to run-down time, a fully charged battery should have an operation usage of several thousand bolts.

2.3 Battery Removal and Replacement

If the tool and battery guidelines are followed, the battery life should exceed the normal re-calibration interval of the tool. As a preventative measure the battery should be replaced by New World Technologies or Authorized Service Centre at the desired re-calibration interval and only be replaced with an NWT approved battery.

The user should not replace the battery at any time without NWT approval.

3.0 Smart Socket Assembly

The Smart Socket is a battery powered, strain gauged socket for precision torque monitoring of fastening operations.

The Smart Socket must be properly selected to fit both the mating tools Square Drive and the Application Fastener, without exceeding the Maximum Torque Rating of the model. Refer to Section 1.2 – Specifications, for the models and torque ranges.

The Smart Socket assembly is comprised of the following:

Figure 3.0-1: Smart Socket Assembly

1. Socket Hex Drive – Engages application fastener.
2. Socket Square Drive – Recieves (customer supplied) tool's Square Drive.

3. Socket Retaining Pin Hole/Retaining O-Ring Groove – Used with the supplied Retaining Pin and O-Ring (or set screw) to retain the Socket to the user supplied tool's Square Drive.
4. Screen - Displays Battery Charge, Mode, Status, and Measured Torque.
5. Keypad - For wake-up and setting selection.
6. Charging/Comms Port – Used with supplied USB Charger/Comms Cable to connect the Smart Socket to a PC for the purpose of charging the internal Lithium Polymer battery, device configuration, and downloading Data Logs.
7. Reset Button – Located on the back of the Smart Socket, the Reset Button can be used to reset the Smart Socket. It can be pressed with a 1.5 metric Allen Key or something of similar size.

Note: The Smart Socket holds 360 Log Records. When display reads "**logs full**", download the Logs to the Data Logger and close Logs. Refer to Section 5.3 – Downloading All Data Logs, for more details on this operation.

4.0 General Operation

This Smart Socket provides a simple display and three button keypad for measuring torque operations.

WARNING!

Read, understand and strictly follow all Safety Instructions, Warnings, and Cautions provided in the user manual prior to use.

CAUTION!

The display is LCD and protected by a lexan cover, however the display is susceptible to mechanical shock which may result in damage and failure. Use with due care and caution to protect the Smart Socket from impacts.

The performance of the display will degrade under high temperature and humidity; avoid such conditions during use and in storage.

4.1 Preparing for Bolting

To use the Smart Socket for bolting operations:

1. If the device is in Sleep Mode, wake the device as detailed in Section 4.2 – Sleep/Wake.
2. Check the battery charge is sufficient for operations, if not, charge the device as detailed in Section 2 – Battery Usage and Charging.
3. Prior to deployment, configure the device as detailed in Section 6 – Pre-Deployment Configuration.
4. Set the Measurement Method. Refer to Section 4.3 – Measurement Method, for more information.
5. Install the Smart Socket on the tool as recommended by the Tool Manufacturer and NWT. Refer to Section 4.4 – Installation, for more information.

4.2 Sleep/Wake

To conserve battery power the Smart Socket will go to sleep after 10 minutes of inactivity on the keypad. This time can be changed, refer to Section 6.1.4 – Tool Uptime, for information on how to do this.

Note: While the device is in Sleep Mode the screen will be blank.

To wake the Smart Socket from sleep:

1. Press the keypad centre button
2. If screen is still blank, connect the Smart Socket to a computer and press the centre button.
3. If screen is still blank, press the reset button on the back of the Smart Socket while it is still plugged in.
4. If the screen is stiil blank, charge the battery for 15 minutes before trying again. If the problem persists contact your NWT Distributor for assistance.

4.3 Measurement Method

Select the Torque Measurement Method using the Smart Socket keypad:

Peak Mode - reads Peak only and will hold it for 1 minute or until you start torqueing another bolt.

READY LBFT PEAK

Track Mode - constantly tracks and displays the read out of the current torque. Pressing the centre button will hold and display the current torque for 1 minute but it will not read Peak Torques. Press and hold the centre button to return to the Main Screen.

READY LBFT TRACK

4.4 Installation

WARNING!

Improper installation or use of the Smart Socket can cause serious or fatal injury to the user. **DO NOT** use the Smart Socket before reading all safety instructions and warnings in this manual.

Ensure that the Square Drive size of the tool matches the Smart Socket model and check the fit is snug.

1. Refer to Section 1 – General Information and Section 2 – Battery Usage and Charging, to familiarize yourself with the Smart Socket models and components.
2. Inspect the Smart Socket for any apparent damage to the display, keypad and/or body. DO NOT charge or use the Smart Socket if any component is damaged.
3. Press the centre keypad button to wake up the Smart Socket.
4. Check the displayed battery charge is sufficient for operations. If not, refer to Section 2 – Battery Usage and Charging, for instructions and safety on charging the Smart Socket.
5. Install the Smart Socket onto the desired tool by the Square Drive end.
6. Insert the Retaining O-Ring (if included) on the neck of the Smart Socket just below the Retaining O-Ring Groove, such that it does not impede the insertion of the tools Square Drive, nor the Retaining Pin.
7. Insert the Retaining Pin through one side of the Socket Square Drive, through the mated tools Square Drive, and out the other side of the Socket.
   Note: The pin should be flush on either side of the Socket Retaining O-Ring Groove and fully engage though the tools mated Square Drive.
8. Insert the Retaining O-Ring (or set screw) into the Groove such that it holds the Retaining Pin in place.
9. Pull on the Smart Socket away from the mated tool and ensure it is securely retained on the tool.

The Smart Socket is now installed and ready for use.

4.5 Operation with Target Mode Disabled

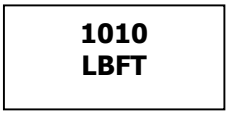
During pre-deployment setup, if "**Target PASS/FAIL Enable**" is not selected, the Smart Socket will be in "**Audit**" mode and will measure, record and display the torque according to the measurement mode selected. No Pass/Fail indication will be displayed.

Please refer to Section 6 – Pre-Deployment Configuration, for more information and setup of the Smart Socket.

1. Check the device status and configuration on the screen, where "**XXXX**" is the selected measurement mode, either "**PEAK**" or "**TRACK**". The screen should be displayed as:

READY LBFT XXXX

2. Proceed with bolting operations as per the users' normal process and safety procedures, while also following the safety instructions and warnings in this manual for the use of the Smart Socket.
3. Each measured Peak Torque will be displayed as:

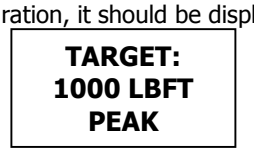


4.6 Operation with Target Mode Enabled

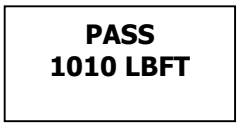
If "**Target PASS/FAIL Enable**" mode is selected during pre-deployment setup and measurement mode is set to "**PEAK**", a "**PASS**" or "**FAIL**" will be displayed on the Smart Socket after a Peak Torque. The Pass/Fail is based on the Target Tolerance Parameter defined during the pre-deploment setup.

Please refer to Section 6 – Pre-Deployment Configuration, for more information and pre-deployment setup of the Smart Socket.

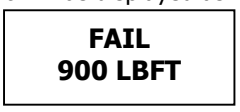
Check the device status and configuration, it should be displayed as:



1. Proceed with bolting operations as per the user's normal process and safety procedures, while also following the safety instructions and warnings in this manual for the use of the Smart Socket.
2. If a torque cycle result is a "**PASS**", it will be displayed as:



If a torque cycle result is a "**FAIL**", it will be displayed as:



3. If the "**Redo Screen**" Setup Parameter is enabled (refer to Section 6.2 – Operating Modes), then on "**FAIL**" user will have to press the centre button, then they will be prompted with:

Pressing the corresponding keypad button below **"Y"** for **YES** will cause the Bolt ID to be maintained for the next torque cycle, but as an appended record. The screen will look like this:

The Retry # is the number of times the bolt has been retried and the Target # is the Target Torque. For more information on setting the Target Torque refer to Section 6.1.6 – Set Points.

Pressing the corresponding keypad button below, **"N"** for **NO** will cause the Bolt ID to be incremented on the next torque cycle.

5.0 Data Log PC Operations

The PC Interface is used to interact with the Remote Audit System. Once connected to the Remote Audit System the operator is able to download Data Logs, view tool details, configure the specifications of the tool and calibrate the Remote Audit System. Figure 5.0-1 shows the

main display screen. For more detailed information on the Data Logger, refer to the RT Data Logger Manual located under the "Help" dropdown menu in the Data Logger (Figure 5.0-2).

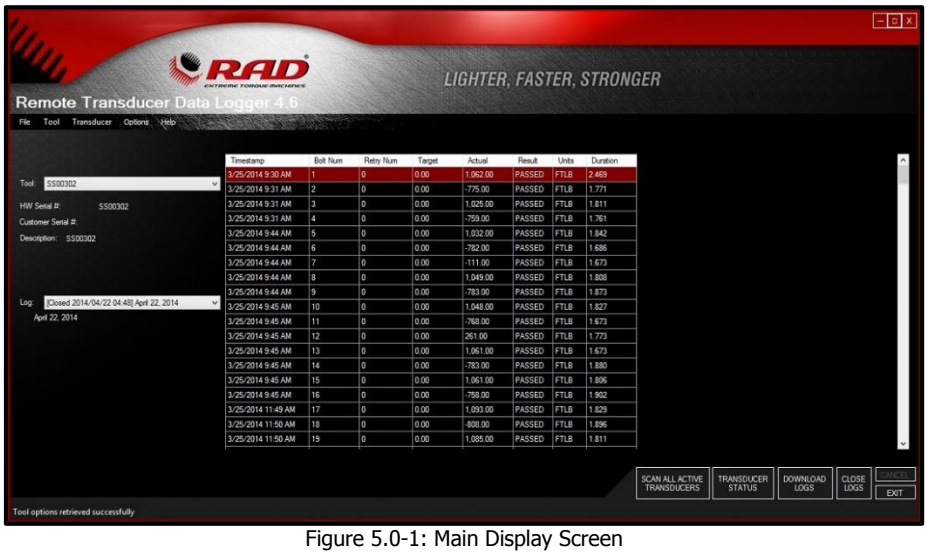


Figure 5.0-1: Main Display Screen

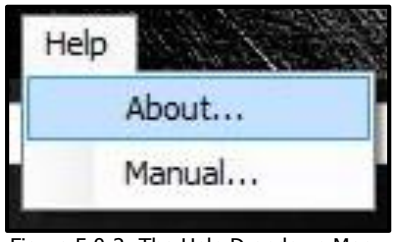


Figure 5.0-2: The Help Dropdown Menu

5.1 Software Installation & PC Requirements

The RT Data Logger Software is compatible with Window XP, Windows Vista, Windows 7 and Windows 8 operating systems.

Note: The "New Customers" download package is for customers with a Windows 8 computer or for those that do not have an existing database (compatible with Windows XP, Windows Vista, Windows 7 and Windows 8).

Note: The "Existing Customers" download package is for customers who have an existing database that is still in use (compatible with Windows XP, Windows Vista and Windows 7).

The RT Data Logger Software can be downloaded from www.radtorque.com.

Choose either the "New Customers" or the "Existing Customers" download package for the Data Logger Software and a "Hardware Driver" download package for the drivers necessary for operations.

After the download is complete find and click on the "Setup.exe" in the Data Logger download package and the ".exe" in the Drivers download package and follow the installation instructions.

Note: If a physical copy is needed, request a CD copy or a memory stick copy from your Authorized RAD Distributor or New World Technologies Inc. Refer to Section 8.0 – Contact Us.

5.2 Connecting the Smart Socket to a PC

WARNING!

Refer to Section 2 – Battery Usage and Charging, and follow all instructions and warnings prior to connecting the USB Charger/Comms Cable. Failure to do so may cause the battery to combust and cause serious or fatal injury.

The Smart Socket can be connected to a PC through Bluetooth for Smart Socket Configuration and Data Log downloads.

1. Turn on Bluetooth on the Smart Socket. To do this, press one of the arrow keys until the screen reads "**BT OFF**" (Figure 5.2.2-1). This is the current state of the

Bluetooth. Press the centre button. When Bluetooth is turned on, the screen will read "**BT ON**" (Figure 5.2.2-2).

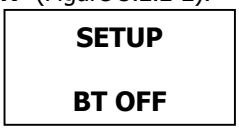


Figure 5.2-1: Setup Screen With Bluetooth Disabled

Figure 5.2-2: Setup Screen With Bluetooth Enabled

To connect the Smart Socket to the PC follow the steps below:

Note: It is recommended that a Bluetooth Dongle is used when connecting the Smart Socket to a PC. The Bluetooth Dongle has a range that goes further than the range of a computer with integrated Bluetooth.

a. Right click the "**Bluetooth Devices**" icon in the bottom right of the screen.
b. Click "Add a Bluetooth Device".
c. Click the serial number of the Smart Socket that you want connected.
d. Enter the correct Pairing Code.

Note: The default Pairing Code is "1111". Refer to Section 5.7 – Changing the Bluetooth Pin, for information on how to change the Pairing Code.

2. Open the RT Data Logger Software.
3. Select "**Scan All Active Transducers**" from the bottom of the screen (Figure 5.2.2-3). The Smart Socket should now be connected to the PC. Proceed with configuration or data download as detailed further in this section.

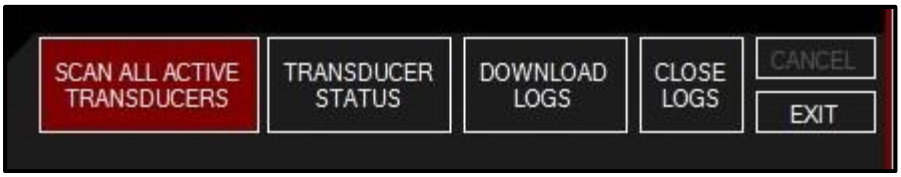


Figure 5.2-3: Scan All Active Transducers

Note: For troubleshooting, refer to Section 7.2 – Turning On Bluetooth: Troubleshooting.

5.3 Downloading all Data Logs

Note: The Smart Socket holds 360 Logs.

Using the RT Data Logger Software, the operator is able to download the stored Data Log from the Smart Socket to the PC.

1. Press the "**Download Logs**" button on the Main Screen (Figure 5.3-1).
2. The PC program will download all the data from the device.
3. You will be prompted to add descriptions of the tool and the Data Logs once the Log has been downloaded. These descriptions can be anything to help you identify the data.

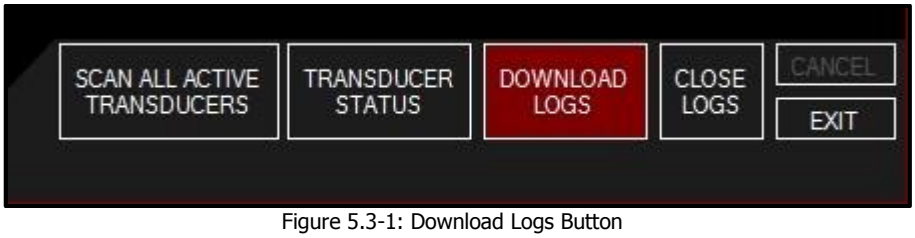


Figure 5.3-1: Download Logs Button

5.4 Deleting (Closing) Data Logs

Closing Data Logs allows the operator to remove the Log from the device. This information will remain on the PC. The title of the closed Log will be automatically modified to represent the date it was closed.

To close a Data Log:

1. Select the Log you would like to close.
2. Select "**Close Logs**" located under the "Tool" tab or press the "**Close Logs**" button

on the bottom of the Main Screen (Figure 5.4-1).

Figure 5.4-1: Close Logs Button

3. The name of the Log file will automatically change to "**Closed**" with the date and time at which it was closed (Figure 5.4-2).

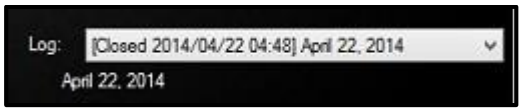


Figure 5.4-2: Example of a Closed Log

5.5 Generating Data Log Reports

This feature allows the user to generate a Data Log Report for a selected Data Log.

To generate a Data Log Report:

1. Select the Data Log that you want to generate a report for.
2. In the "File" drop down menu, press "**Generate Data Log Report**" (Figure 5.5-1).

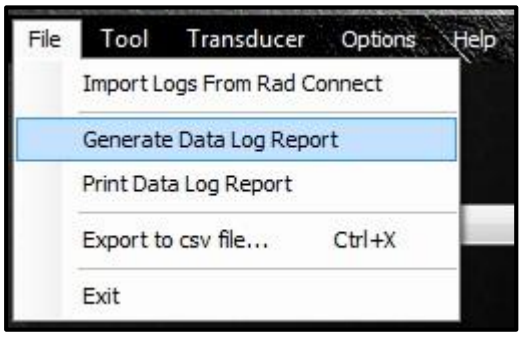


Figure 5.5-1: Generate Report Button

3. The generated report will then be displayed (Figure 5.5-2).

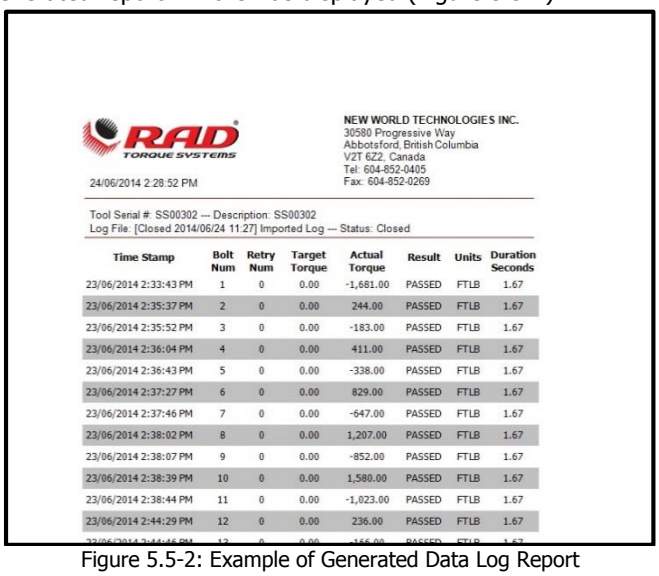


Figure 5.5-2: Example of Generated Data Log Report

4. From the generated report window, the report can be printed or saved as a different file type.

5.6 Printing Report

This feature allows the user to print a Data Log Report for a selected Data Log.

To print a Data Log report:

1. Select the Data Log you want to print.
2. In the "File" drop down menu, press "**Print Data Log Report**" (Figure 5.6-1).

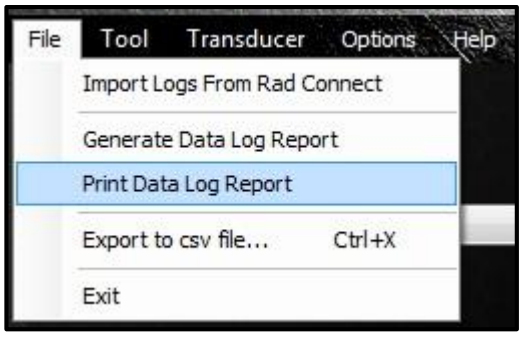


Figure 5.6-1: Print Data Log Report Button

3. The Data Log report will then be printed to the default printer that is set up on your PC.

5.7 Exporting Data

Exporting data allows the user to save the Data Logs to another location and also allows the user to print the Data Logs.

1. In the "File" tab press "**Export to cvs file…**" (Figure 5.7-1).

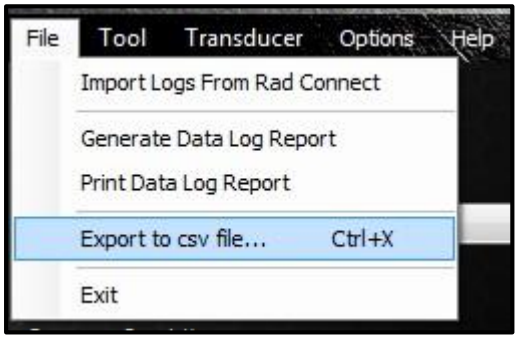


Figure 5.7-1: Export Button

2. A prompt window will be displayed asking to export all Data Logs or just the currently selected Data Log (Figure 5.7-2). If "**Yes**" is selected, all Data Logs will be exported. If "**No**" is selected, only the currently selected Data Log will be exported. If "**Cancel**" is selected, no Data Logs will be exported.

Figure 5.7-2: Export Dialog Box

3. If "**Yes**" or "**No**" was selected, a window will be displayed asking for a location to save the file (Figure 5.7-3).

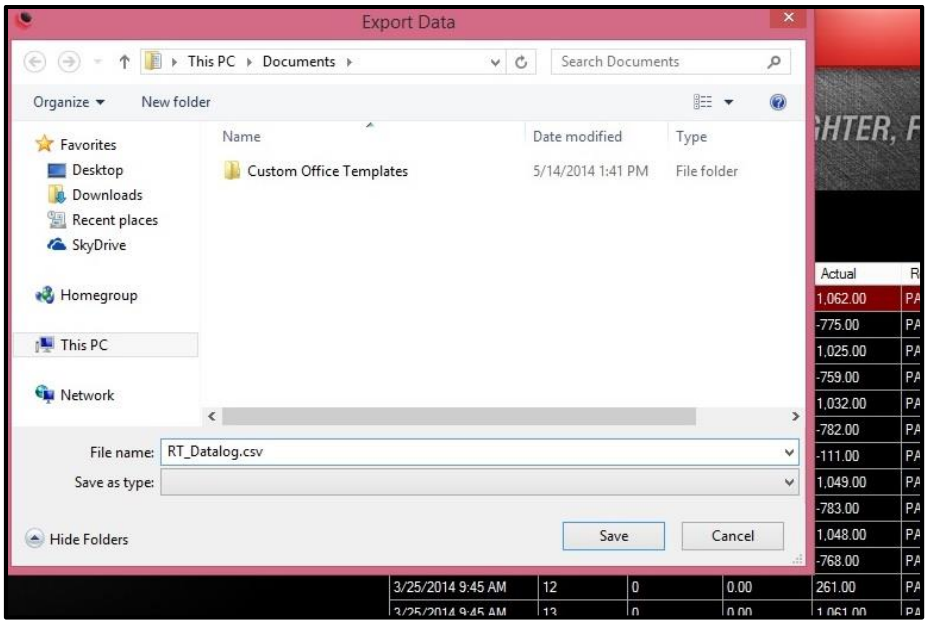


Figure 5.7-3: Saving the Data Log

4. The file can now be opened to view and can now be printed from the PC.

5.8 Changing the Bluetooth Pin

Changing the Bluetooth pin allows the user to change the Pairing Code of the Smart Socket.

To change the Bluetooth pin:

1. Connect the Smart Socket to the PC. Refer to Section 5.2 – Connecting the Smart Socket to a PC, for more information on this procedure.
2. In the Tool Tab, press "**Bluetooth Pin**" (Figure 5.8-1).

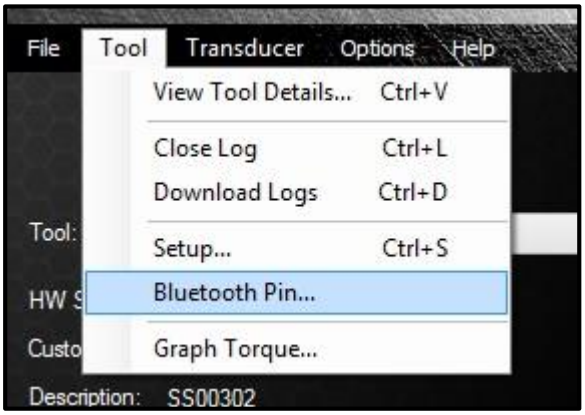


Figure 5.8-1: Bluetooth Pin Button

3. A dialog box will be displayed asking for the old pin and a new pin (Figure 5.8-2).

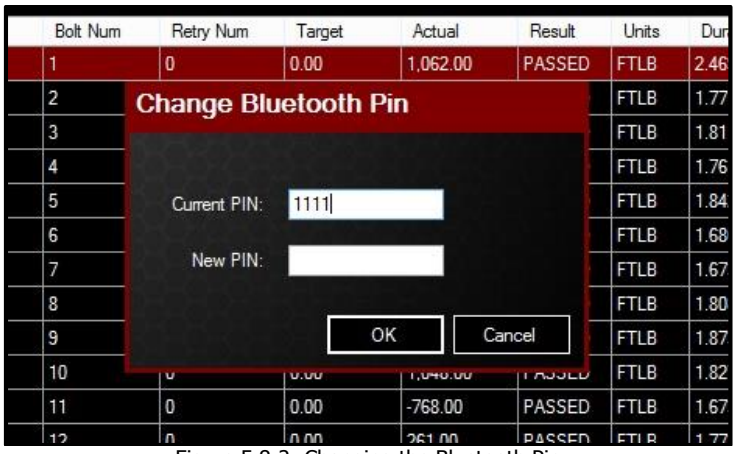


Figure 5.8-2: Changing the Bluetooth Pin

Note: The new pin must be 4 digits long.

4. After the new pin is entered, reset the Smart Socket and reconnect it to the PC using the new Pairing Code.

6.0 Pre-Deployment Configuration

Prior to each deployment, the user should verify the Smart Socket is configured as desired. Access to a PC or Laptop running the RT Data Logger software is required.

Configuration includes date/time clock, measurement units, operating modes, and if enabled, targets and Pass/Fail indication tolerance.

RT Data Logger Software is available for download from www.radtorque.com.

See Section 5.1 – Software Installation & PC Requirements, for more information on installing the RT Data Logger Software.

See Section 5.2 – Connecting the Smart Socket to a PC, for more information on connecting the Smart Socket to the PC.

6.1 Tool Setup

Under the "Tool" drop down menu located in the "**RT Data Logger Software**" select "**Setup**" (Figure 6.1-1).

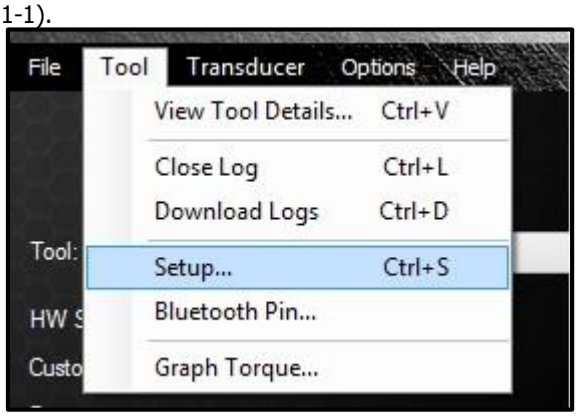


Figure 6.1-1: The Setup Button

After "**Setup**" is selected, the Tool Setup Menu will be displayed (Figure 6.1-2).

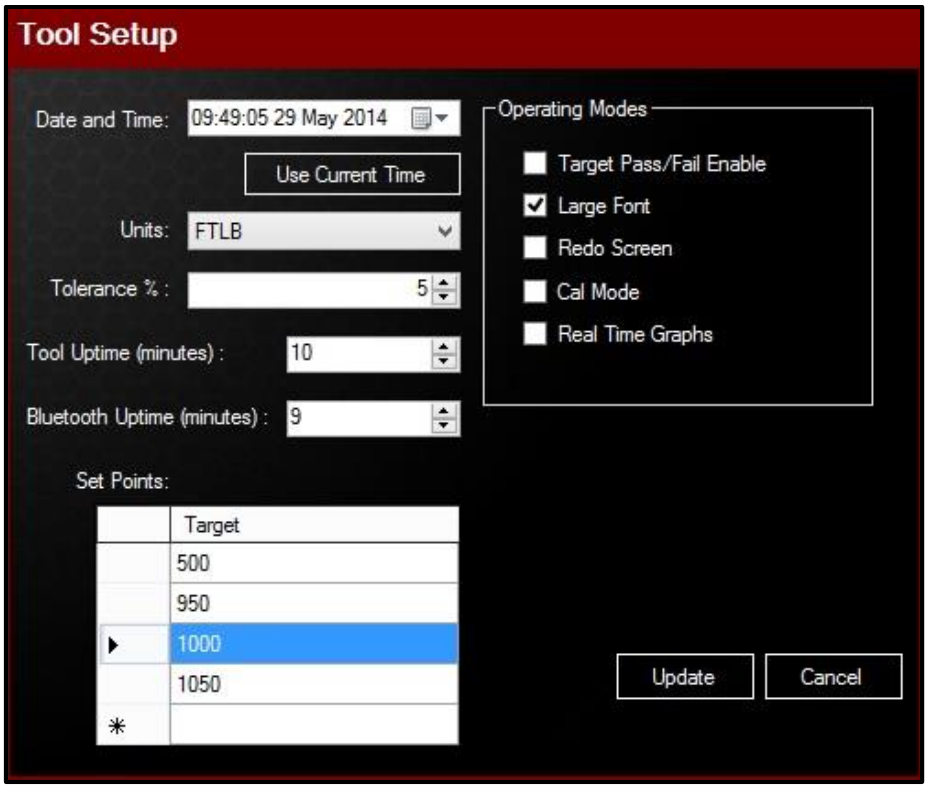


Figure 6.1-2: Tool Setup Menu

Once all the desired changes have been made, press "**Update**".

6.1.1 Date/Time

The date and time can be set manually or press "**Use Current Time**" to use the PC date/clock time.

6.1.2 Measurement Units

Select the desired units from the units drop down menu (Figure 6.1.2-1). The possible choices are "**FTLB**", "**INOZ**", "**INLB**", and "**Nm**".

Figure 6.1.2-1: Units Drop Down Menu

6.1.3 Target Tolerance

In the Tolerance percent box, enter the tolerance from target desired to indicate a Pass or a Fail.

Note: Operation Mode – "**Target Pass/Fail Enable**", must be selected for the tolerance parameter to be effective. Refer to Section 6.2 – Operating Modes, for more information on this option.

6.1.4 Tool Uptime

This is the amount of time (in minutes) before the tool goes to sleep. By default this time is set to 10 minutes.

6.1.5 Bluetooth Uptime

This is the amount of time (in minutes) before the Bluetooth turns off. By default this time is set to 9 minutes.

6.1.6 Set Points

In the Set Points box (Figure 6.1.6-1), enter the desired target that will be selectable by the user. To select a target, click on the desired target. To add a new target, press the "**Star**" in

the bottom left corner. To change a current target, double click the target that needs to be changed and enter the new target.

Note: The currently selected target will have an arrow beside it.

Note: Operation Mode – "**Target Pass/Fail Enable**", must be selected for the tolerance parameter to be effective. Refer to Section 6.2 – Operating Modes, for more information on this option.

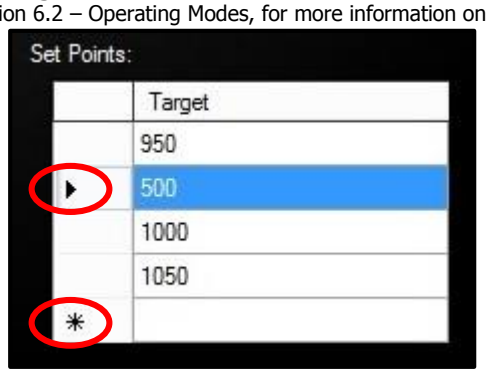


Figure 6.1.6-1: Set Points Box

6.2 Operating Modes

Under the "Tool" drop down menu located in the "**RT Data Logger Software**" select "**Setup**", then select the desired operation modes (Figure 6.2-1).

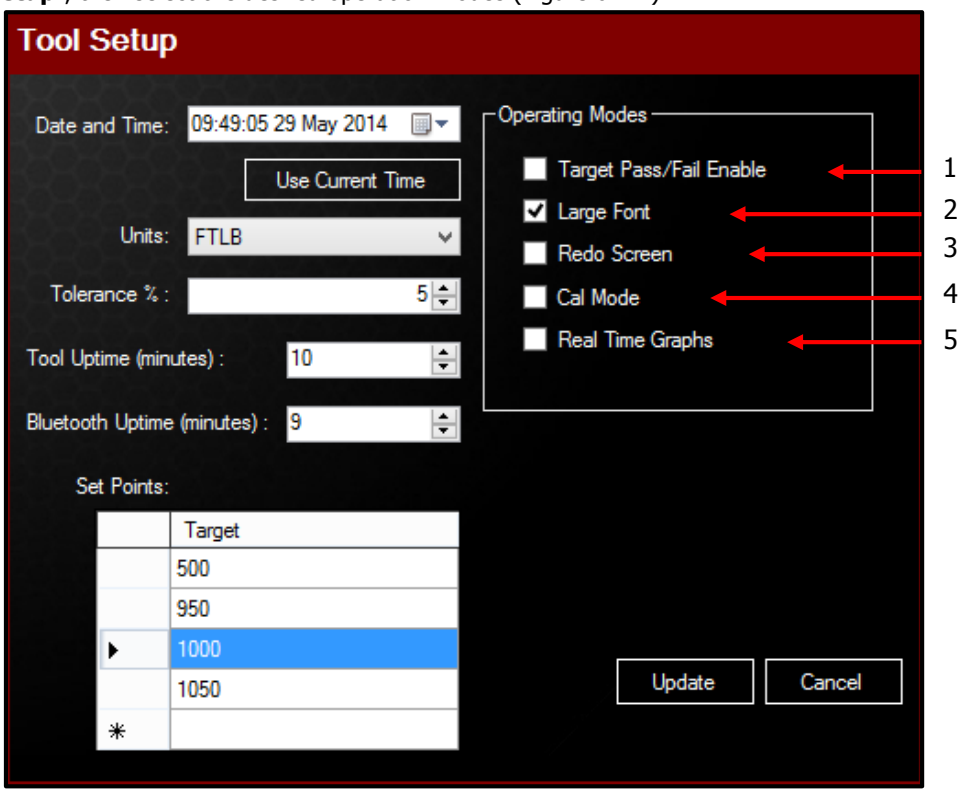


Figure 6.2-1: Tool Setup Menu

Operating Modes:

1. Target Pass/Fail Enable:

   When the "**Target Pass/Fail Enable**" is disabled, the Smart Socket will be in "**Audit**" mode and will measure, record and display the torque according to the measurement mode selected.

   When the "**Target Pass/Fail Enable**" is enabled, Pass/Fail indication via the screen will be updated based on the desired tolerance (Section 6.1.3 – Target Tolerance) within target (Section 6.1.6 – Set Points).

2. Large Font:

   When Large Font is enabled, the Smart Socket screen will display the torque readings in a larger font.

   Note: By default the Large Font option is already enabled.

3. Redo Screen:

   For purpose of bolt number and Data Log synchronization, if this mode is enabled and a target FAIL occurs, user will have to press the centre button and then they will be prompted with "**Redo? Yes or No**" (Figure 6.2-2).

Figure 6.2-2: Redo Screen

Pressing the corresponding keypad button below **"Y"** for **YES** will cause the Bolt ID to be maintained for the next torque cycle, but as an appended record. Figure 6.2-3 shows the screen after "**Y**" is pressed. Where the "**Retry #**" is the number of times the bolt has been retried and the "**Target #**" is the current setpoint.

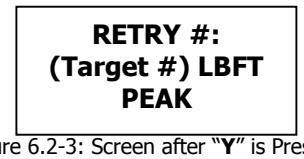


Figure 6.2-3: Screen after "**Y**" is Pressed

Pressing the corresponding keypad button below, **"N"** for **NO** will cause the Bolt ID to be incremented on the next torque cycle.

4. Cal Mode:

   When Cal Mode is enabled, the screen of the Smart Socket will display raw data values that come from the strain gauges. These numbers are not in any torque units.

5. Real Time Graphs:

   Note: The Smart Socket must be connected to the Data Logger during the torque cycle for Real Time Graph Mode to work. Refer to Section 5.2 – Connecting a Smart Socket to a PC, for more information on how to connect the Smart Socket to the Data Logger.

   When Real Time Graphs is enabled, the user can view a live graph of the torque cycle on the "**RT Data Logger Software**". To view the live graph, go to the "Tool" tab and press "**Graph Torque**" (Figure 6.2-3).

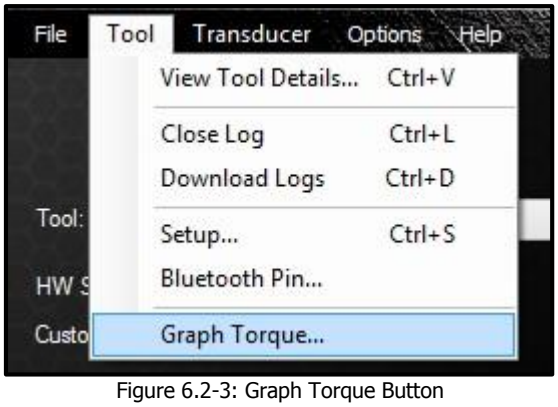


Figure 6.2-3: Graph Torque Button

The Torque vs Time Graph will then be displayed on the screen (Figure 6.2-4).

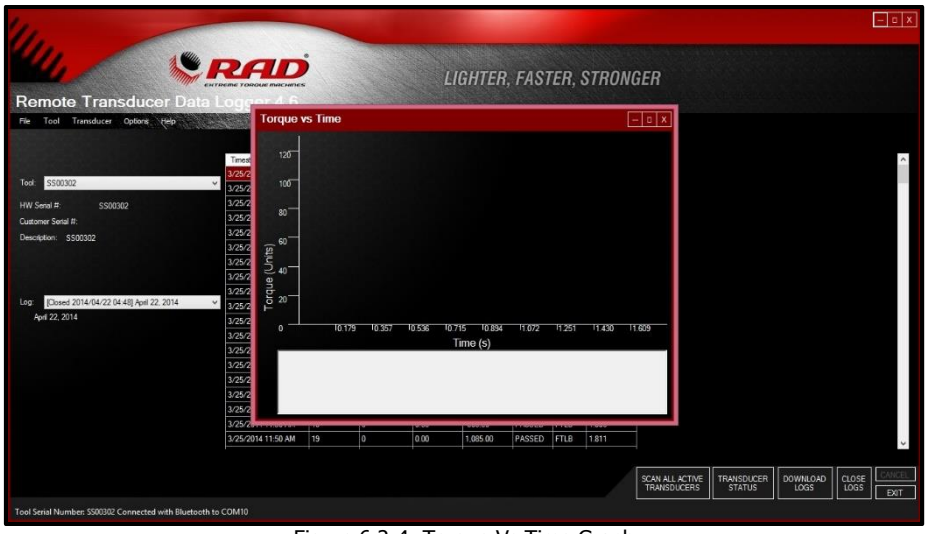


Figure 6.2-4: Torque Vs Time Graph

When a pull is done with the Smart Socket, a live graph will be created on the Torque vs Time screen (Figure 6.2-5).

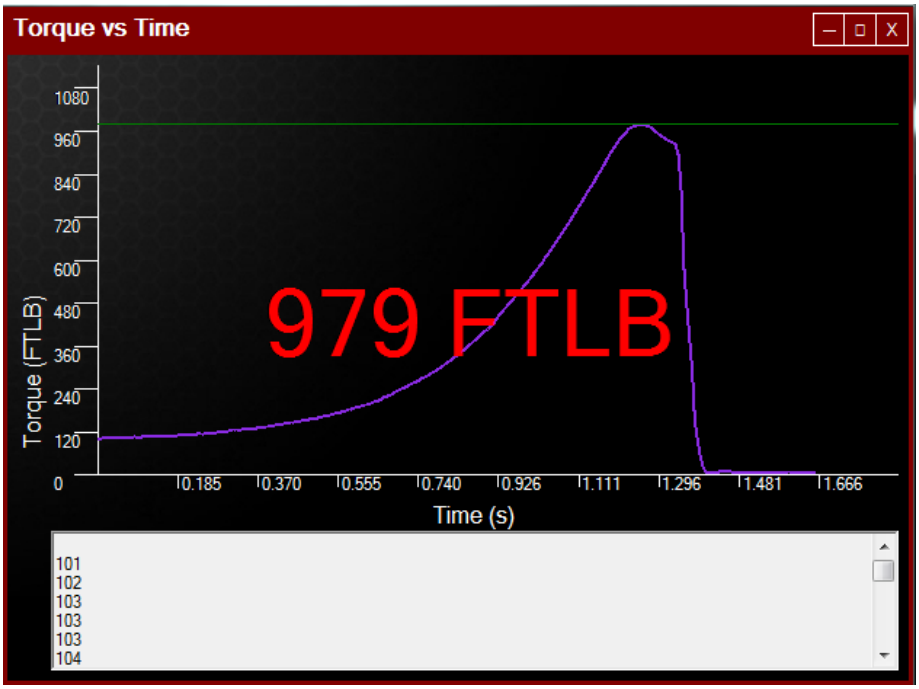


Figure 6.2-5: Live Graph

7.0 Troubleshooting

If there is a problem with your Smart Socket, please first check that all instructions in the User Manual have been followed and the device/battery is charged.

WARNING!

Electrical Shock can cause serious or fatal injury. Do not remove the battery cover or attempt to repair the device or replace the battery. Do not touch any exposed power device, electrical connections or cable.

7.1 Problem Diagnosis

The following section describes the expected normal and abnormal status conditions and respective steps for resolution.

If the problem persists please contact your Authorized RAD Distributor or New World Technologies Inc. Technical Support.

7.1.1 Display Screen is Blank

Solution:

1. Press the keypad centre button to wake the Smart Socket from Sleep Mode.
2. If screen remains blank, plug in the Socket to a computer and press the reset button on the back of the Smart Socket.
3. If screen remains blank, charge the Smart Socket.

If problem persists after charging, call your RAD Distributor for return/inspection.

7.1.2 Display Reads "Charge Required"

The Smart Socket battery does not have enough power to operate.

Solution: Charge the Smart Socket (refer to Section 2.2 – Battery Charging and Storage)

If message persists after charging, contact your RAD Distributor for return/inspection.

7.1.3 Display Reads "Battery Low"

Solution: Charge the Smart Socket as soon as possible, (refer to Section 2.2 – Battery Charging and Storage).

If message persists, contact your RAD Distributor for return/inspection.

7.1.4 Display Reads "Logs Full"

Solution: Connect the Smart Socket to the PC Software, download the Data and close the Log, (refer to Section 5.0 – Data Log PC Operations).

If message persists after closing the Log file, contact your RAD Distributor for technical support.

Note: The Smart Socket can hold 360 Logs

7.1.5 Display Shows "Ready" or "Target" but doesn't update Torque Cycle

Solution: Check the Smart Socket was uploaded prior to the next cycle.

If error persists, contact your RAD Distributor for return/inspection.

7.1.6 Display Shows "Unload"

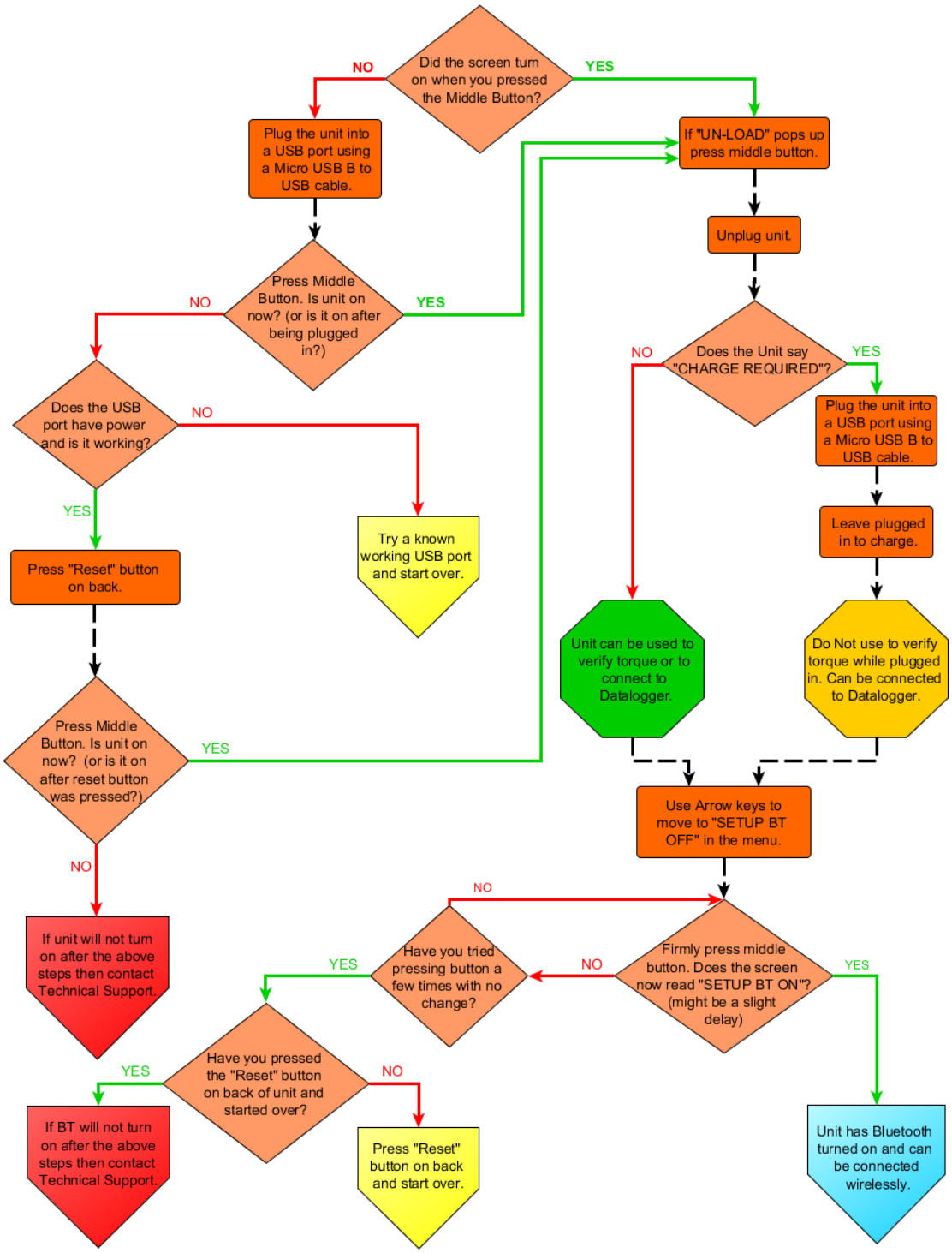
Solution: Press the keypad centre button.

If error persists, contact your RAD Distributor for return/inspection.

7.1.7 Battery Does Not Hold a Charge

The Battery needs to be replaced; contact your RAD Distributor for return/inspection.

7.2 Turning On Bluetooth: Troubleshooting


Did the screen turn on when you pressed the Middle Button?
NO
YES
Plug the unit into a USB port using a Micro USB B to USB cable.
If "UN-LOAD" pops up press middle button.
Unplug unit.
Press Middle Button. Is unit on now? (or is it on after being plugged in?)
NO
YES
Does the USB port have power and is it working?
NO
Try a known working USB port and start over.
YES
Press "Reset" button on back.
Does the Unit say "CHARGE REQUIRED"?
NO
YES
Plug the unit into a USB port using a Micro USB B to USB cable.
Leave plugged in to charge.
Unit can be used to verify torque or to connect to Datalogger.
Do Not use to verify torque while plugged in. Can be connected to Datalogger.
Press Middle Button. Is unit on now? (or is it on after reset button was pressed?)
YES
NO
If unit will not turn on after the above steps then contact Technical Support.
Use Arrow keys to move to "SETUP BT OFF" in the menu.
NO
Firmly press middle button. Does the screen now read "SETUP BT ON"? (might be a slight delay)
YES
NO
Have you tried pressing button a few times with no change?
YES
Have you pressed the "Reset" button on back of unit and started over?
YES
NO
If BT will not turn on after the above steps then contact Technical Support.
Press "Reset" button on back and start over.
Unit has Bluetooth turned on and can be connected wirelessly.

Smart Socket Limited Warranty

New Tool Warranty

Any new tool branded with the RAD name and purchased from New World Technologies Inc., or through one of its authorized distributors or agents, is warranted to the original purchaser against defects in materials and workmanship for a period of one (1) year from the date of original calibration. The electronic control module is covered for a period of six (6) months from the date of calibration. Under the terms of this warranty, New World Technologies Inc., at its option and F.O.B. either its factory or an authorized service center, will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by New World Technologies Inc., to be defective in material or workmanship or both. If any product or part is replaced or repaired under the terms of this warranty, that product or part will carry the remainder of the warranty from the date of original calibration.

Repaired Tool Warranty

Once a tool is beyond its new tool warranty, New World Technologies Inc., for a period of three (3) months from the date of repair, will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by New World Technologies Inc., to be defective in material or workmanship or both. If any product or part is replaced or repaired under the terms and conditions of this warranty, that product or part will carry the remainder of the warranty from the date of original repair.

To qualify for the above mentioned warranties, written notice to New World Technologies Inc. must be given immediately upon discovery of such defect, at which time New World Technologies Inc. will issue an authorization to return the tool. The defective item must promptly be returned to New World Technologies Inc. all freight charges prepaid. When returning a tool, the reaction arm/s being used with the tool must also be returned.

New World Technologies Inc.: Telephone: 1 800 983 0044 Email: info@radtorque.com

Exclusions from Warranty

At New World Technologies Inc.'s sole judgment tools or accessories that have been altered, damaged, misused, abused, badly worn due to excessive utilization, lost, or improperly maintained will NOT be covered under the terms of this warranty.

Tools returned without the reaction arm/s will not be covered under the terms of this warranty.
Consumable parts and accessories (such as extensions, reaction blanks/arms) and the are not covered under this warranty.

Tools that have been relabeled without prior written consent of New World Technologies Inc. will not be covered under this warranty.

Equipment and accessories not manufactured by New World Technologies Inc. (measuring equipment, etc.) are warranted only to the extent of the original manufacturer's warranty.

**There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose are limited to one year from date of calibration and to the extent permitted by law. Liability for consequential damages under any and all warranties are excluded to the extent exclusion is permitted by law.*